

[54] SURGE DETECTOR FOR TURBINE ENGINES

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[57] ABSTRACT

A pair of pressure transducers are connected to pressure probes positioned in a flow passage of a turbofan engine downstream of the fan and respond to pressure fluctuations which occur in the airstream. One transducer has a high response capability, and its output is passed through a band-pass filter to isolate the high frequencies of interest. The other transducer has a low response capability, and its output is passed through a low-pass filter to provide the steady state pressure level. A triggering level is scheduled as a function of the steady state pressure level, and a comparator is used to continuously compare the triggering level with the level of the high frequency pressure signal produced in the band-pass filter. If the amplitude of the high frequency pressure is greater than that of the triggering level, the engine is approaching a surge or stall condition, and a warning signal is generated which may be used to institute corrective action.

10 Claims, 2 Drawing Figures

